Southeast Tennessee RC&D Provides Grant for Kudzu Control Project

Kudzu, a semi-woody perennial vine, infests approximately 8 million acres, primarily in the southeast. It is estimated to be spreading at the rate of almost 150,000 acres per year.

Above ground utility companies do not try to eliminate an entire kudzu infestation due to the difficulty and cost, but just treat the immediate area around the base of kudzu covered poles and guy-wires. Control is usually accomplished with a combination of chemicals and mechanical means. Eradication is an expensive multi-year process.

After observing the natural characteristics of the plant, Jack Callahan, an engineer, presented a project proposal to control kudzu using barriers to the Southeast Tennessee Resource Conservation and Development (RC&D) Council which they adopted as a project. They initiated a contract agreement with Jack Callahan to serve as project manager. A grant was secured through the USDA Forest Service, with the Cherokee National Forest sponsoring the grant.

A test site was located within the city limits of Cleveland. Individual test sites were installed, with camera points identified, and a digital photo record was begun. As individual devices of various shapes were installed, it became apparent that the first provisional patent needed to be broadened, so a second application was submitted and the US Patent Office granted license for this patent on March 29, 2002.

The design of the kudzu guards were fine-tuned during the following months and growth was recorded on some 14 sub sites within the test area. A mailing list was developed for some 150 electric coops/utility companies operating in the Tennessee valley, and a marketing letter/questionnaire was mailed to these entities. Based on a response of more than 16%, data was compiled determining the current cost of treatment, the desire for a simple kudzu guard, and a price range the potential users were willing to pay. Research of material costs indicated that a profit could be realized, and target customers included a huge base from Texas to Virginia, and ranging as far north as Ohio.

Use of these new devices will provide managers with another tool, which is low cost, very low maintenance, and was currently unavailable until now.

Controlling the spread, both horizontal and vertical, of kudzu with this new innovation relies on simply placing barriers on the area or item to be protected. These barriers exceed several basic growth characteristics of the vine. Based on field observations and controlled test site measurements, it has been determined that kudzu 1) cannot extend itself unsupported more than approximately 42 inches; 2) cannot climb a smooth surfaced object with a diameter greater than approximately 7 inches (or a perimeter of more than approximately 24 inches); and 3) Does not spread underground.

Utilizing this basic information, devices were developed to prevent kudzu from climbing guy-wires and utility poles or to spread beyond a fence line. This same knowledge can be applied to vegetation management practices at the interface between kudzu and a stand of non-affected timber, which will limit further spread of the vine, or be used to reforest a timber stand.

Based on the testing of kudzu guards on guy-wire, utility pole, and fence situations, kudzu can be stopped from climbing or spreading with simple, inexpensive devices. Materials used were recycled polyethylene sheeting with an expected life of 10 years. Installation may be performed with minimally skilled labor and simple tools. Test results show that the devices will prove useful to utility companies who have a kudzu problem, and they will potentially save labor and the use of herbicides in many situations. The fence treatment has generated interest with some local landowners, as well as Highway Department maintenance managers who have responsibility for containing kudzu within their right-of-ways. Maintenance of the fence treatment may require only one mechanical treatment per year, depending on the other types of vegetation, which coexist with the kudzu. With no similar devices currently available, and normal maintenance practices, which do not attempt to eradicate the entire infestation, the market is wide open.

Mr. Callahan's idea has caught the interest of several companies. After almost six months of negotiations, he recently signed a License Agreement with Osmose Utilities Services, granting them exclusive rights to those parts of the patent as the apply to the utility industry. This leaves numerous other applications in the private sector, which are being actively pursued.

This new approach to controlling the spread of kudzu without chemical or mechanical means affords landowners and managers a major breakthrough to protect their property and equipment. The fence treatment allows landowners located next to the kudzu infestation to stop the kudzu at the property line, and for the use of this protected land without the headache of continually fighting with this aggressive vine. Above ground utility owners now have another tool with which to protect their facilities and reduce the potential for power outages, while saving maintenance dollars. Based on the patent search done, this approach has never been utilized.

The idea and resultant devices is a culmination of observations and testing done over the past 6 years, with the most intensive work and bringing the idea to the patent approval in the past 24 months. The potential for application in the southeast is quite enormous, from utility applications to reclamation of kudzu-infested areas, considering the widespread presence of kudzu. Full development of the market will create the opportunity for using materials "off the shelf" as well as the possibility for special molding of the guy-wire guard, as well as vegetation management practices. Growth of the business will allow for the creation of jobs from manufacturing and shipping to installation.